



A REVIEW REPORT ON
SATONG AND GUNGTONG

PREPARED BY

GOOD GOVERNANCE COMMITTEE

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**Excerpts from the His Majesty's Address to the Nation, 109th National Day,
17 December 2016, Trongsa**

“Bhutan’s difficult terrain means that only 7 percent or 664,000 acres of our total land is usable. We must ensure that this small amount of land is put to the best use for the benefit of our people.

“...It is a concern that in a rapidly growing economy, inequality may bring great divides in our society between the rich and the poor. Another objective of the Land Kidu has been to empower and uplift people, and allow them to prosper.

“...However, what I had hoped for with this understanding has not been fully realized. Over the years, there are increasing numbers of Gungtong (absentee households), and I find that large portions of land continue to be left fallow across the country. The people, especially the young have been leaving their villages for towns in greater numbers. I am deeply concerned that they will encounter unemployment and other difficulties in urban areas, and begin to despair.

“...This should not be so, because there are numerous opportunities in Bhutan.

“...We spend Nu. 8 billion annually to import food. To cite an example, we export potatoes and oranges, and then import potato chips and orange juice.

“...We must ask ourselves then, where we have gone wrong.

“...In Bhutan, the total loan stock that has been lent out is Nu. 85 billion, but out of this, only 4.5 billion, or about 2.5% has been utilized in the agriculture sector. This must change.”

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1. Background

Bhutan is an agrarian country where 62.2% of the total population reside in the rural areas where farmers are predominantly engaged in the subsistence farming for their livelihoods.¹ Of the total agriculture landholdings, only 37% produced mainly for their own consumption and 53% for own consumption with some sale.² In the recent past, the agriculture sector on average accounts for 50% of overall employment share and 17% of GDP. Despite significant programs and investments in the agriculture sector over the past decades the growth and productivity have been severely constrained by the hosts of interrelated physical, social, economic, environmental and demographic issues.

Though the total arable land is only about 7% (664,114.45 acres) of the total geographical area only 2.93% (278,126.39 acres) of the total land cover was under cultivation in 2010.³ Of this, 61.69% (171,587.72 acres) constituted *kamzhing* (dry land) and 27.67% (76,962.01 acres) *chhuzhing* (wet land). According to the RNR census 2019, a total of 66,120.28 acres were found to be *satong* (fallow⁴ or uncultivated land) - 82.5% dryland and 13.55% wetland. By dzongkhags, Pemagatshel and Trashigang showed the highest proportion of fallow dry land whereas Samtse and Sarpang accounted for the highest fallow wetland. Among others, the most notable reasons for leaving land fallow are due to irrigation problem, human wildlife conflict and workforce shortage.

On the other hand, increasing trend of *gungtong* (absentee household) is another challenge witnessed mostly in the rural areas. Presently, there are nearly 6,000 households reported as *gungtong* across the country and 75% of them belonged to the six eastern dzongkhags.⁵ As evident from various literature reviews, *gungtong* is strongly influenced by the internal migration process, which in turn contributes to *satong*⁶. While most dzongkhags in the west experienced population gain from positive net migration, most dzongkhags in the east witnessed net loss of population. People migrate for various reasons ranging from employment to education, family move, marriage,

¹ NSB, 2018: *Population Housing and Census of Bhutan 2017*, p.XV.

² MoAF, 2019: *RNR Census*, p.13.

³ NSB, 2011: *Statistical Year Book of Bhutan 2011*, p.77.

⁴ Refers to arable land that is left uncultivated for at least one agricultural year.

⁵ Presentation by Department of Local Governance and Disaster Management, MoHA, April 10, 2024.

⁶ A household that has a household number and a registered land in the name of a household member and no household member has lived in the house for about six months in the past 12 months.

health and so forth. It is projected that by 2037, half of the country's total population will be residing in the urban areas.⁷

The increasing trend of *satong* and *gungtong* is of national concern. If this trend continues, Bhutan will soon witness some of its villages getting empty, food security becoming more vulnerable and community vitality fast disappearing. During the 5th annual conference of the Dzongkhag Tshogdu and Gewog Tshogde Chairpersons in 2009, the conference discussed about the difficulty faced in collecting taxes from *gungtong* in the rural areas and therefore, directed the Department of Local Governance to review the matter and apprise the Government. The issue was again discussed during the 7th annual conference in 2012 wherein it asked the Government about the status of strategy to address *gungtong* in the country. Likewise, the National Council during its 18th session in 2016 raised concerns about *satong* and *gungtong* while deliberating on the review report of the Agriculture Policy and Strategies.

Considering the long term ramifications of *satong* and *gungtong*, the National Council during its retreat workshop in 2023 identified *satong* and *gungtong* as one of the important issues for its review and therefore, assigned the review work to the Good Governance Committee (GGC). The main focus of the review is to understand the complex driving forces behind underutilization and abandonment of farm lands, as well as, absentee households and recommend appropriate legislation and policy interventions to address these issues at the earliest.

The report presents methodology, current situation at the national and selected sites, observations and recommendations for deliberations.

⁷ NSB, 2019: *Population Projections Bhutan 2017-2047*, p.viii.

2. Methodology

Several literatures were reviewed from policy to periodic reports, draft 13 Five Year Plan, acts, rules and guidelines, census and statistical reports. As a part of its consultative process, GGC carried out consultations with different stakeholders namely the Local Governments and grass root communities in different places. In particular, GGC met with Samtse and Tashicholing Gewogs and Samtse Dzongkhag administration; Nichula, Karmaling and Lhamoizingkha Gewogs and Lhamoizingkha Drungkhag; Kangpar and Phongmey Gewogs and Trashigang Dzongkhag administration; Khamdang and Tongmijangsa Gewogs and Trashiyangtse Dzongkhag administration; Khar Gewog in Pemagatshel; and Trong Gewog and Zhemgang Dzongkhag administration. Above gewogs were selected based on the migration trend from the 2017 Population and Housing Census of Bhutan and situation of fallow land from the RNR Census of Bhutan 2019. Data were collected separately from the above gewogs representing southern, central and eastern region.



Photo: Public consultation in Tashicholing gewog, Samtse (left) and Kangpar gewog, Trashigang (right)

Simultaneously, the Committee made field visits to different sites as identified by the respective Gewogs. At the central level, consultations were also held with the relevant stakeholders namely the Department of Local Governance and Disaster Management, National Land Commission, Ministry of Agriculture and Livestock, Department of Forests and Park Services, and Farm Machinery Corporation Ltd.

Considering the similar experiences and challenges being faced by Nepal regarding outmigration and land fallowing, the Committee availed the opportunity to visit some of the villages in Syangja, Lamjung and Sindupalchok districts in the mid hills of Nepal.

3. Situation of *Satong*, *Gungtong*, Net Migration and Poverty in Bhutan

It is evident on the ground and also from various statistical including media reports that the trend of *satong* and *gungtong* is undoubtedly on the rise across the country. While the migration - mainly the internal migration significantly influences *gungtong*, which in turn contributes to abandonment of farm land, there are other hosts of interrelated factors mainly the physical, social, economic, environmental and demography that influence *satong*.

Table 1: *Satong*, *gungtong*, net migration and poverty across dzongkhags

SL#	Dzongkhag	Wet Land 2019	Dry Land 2019	Wet Land (%)	Dry Land (%)	<i>Gungtong</i> 2024	<i>Gungtong</i> (%)	Net Migration 2017	Poverty Rate 2017
1	Bumthang	0.5	3706.9	0.01	6.79	21	0.35	1049	2.1
2	Sarpang	981.23	1437.7	10.95	2.63	143	2.39	8060	12.1
3	Zhemgang	550.13	4943.5	6.14	9.05	130	2.17	-10,978	25.1
4	Trongsa	541.54	2218.4	6.05	4.06	94	1.57	58	14
5	Samdrupjongkhar	156.5	4440.2	1.75	8.13	388	6.48	-5154	6.2
6	Mongar	490.12	5578.6	5.47	10.21	672	11.22	-12,709	17.1
7	Trashigang	556.36	8285.4	6.21	15.17	1469	24.53	-23,536	10.7
8	Trashiyangtse	586.41	2478.3	6.55	4.54	804	13.43	-8776	11.9
9	Pemagatshel	208.18	8395.8	2.32	15.37	852	14.23	-11,012	13.7
10	Lhuntse	433.13	1405.3	4.84	2.57	323	5.39	-8451	6.7
11	Wangdue Phodrang	888.52	974.27	9.92	1.78	87	1.45	2726	5.4
12	Punakha	597.17	499.98	6.67	0.92	83	1.39	3454	2.6
13	Dagana	648.8	1861.4	7.24	3.41	286	4.78	-6868	33.3
14	Tsirang	679.93	1014.3	7.59	1.86	190	3.17	-5309	4.8
15	Gasa	59.9	108.04	0.67	0.20	1	0.02	609	12.6
16	Thimphu	31.04	263.29	0.35	0.48	0	0.00	59,579	0.6
17	Chukha	203.18	2829.5	2.27	5.18	56	0.94	12,084	3.5
18	Samtse	1261.7	2505.3	14.08	4.59	296	4.94	-5481	12.3
19	Paro	54.53	869.52	0.61	1.59	3	0.05	11,802	0.3
20	Haa	28.95	798.45	0.32	1.46	90	1.50	-1056	0.9
	Total	8,957.8	54614	100	100	5,988	100		8.2

Source: a) *Fallow land data from RNR Census of Bhutan 2019, MoAF*, b) *Gungtong data from Department of Local Governance and Disaster Management, MoHA, April 2024*, c) *Poverty data from Bhutan Poverty Analysis 2017, NSB*, and d) *Net migration tabulated from 2017 Population and Housing Census of Bhutan, NSB*.

Note: a) Wet land and dry land pertain to fallow land in acres. b) Net migrant is the difference between in-migration and out-migration. It can be positive and negative.

In 2019, a total of 250,062 acres of land in the country was under agricultural holdings of which 185,533 acres were dry land, 47,395.59 acres wet land, 8,083.62 acres *khimsa* and 9,091.82 acres of orchard land.⁸ Out of this, a total of 66,120.28 acres of land or 26.4% was fallow – 8,957.81 acres of fallow wet land and 54,613.97 acres of fallow dry land as seen from table 1. By dzongkhags, Pemagatshel (15.37%) followed by Trashigang (15.17%), Mongar (10.21%) and Zhemgang (9.05%) experienced the highest fallow dry land whereas Samtse (14.08%) and Sarpang (10.95%) experienced the highest fallow wet land in the country.

Concerning the *gungtong*, as evident from table 1, there are 5,988 absentee households as of April, 2024 in the country. Six eastern dzongkhags accounted for 75.28% of overall *gungtong*. By dzongkhags, Trashigang (24.53%) followed by Pemagatshel (14.23%), Trashiyangtse (13.43%) and Mongar (11.22%) recorded the highest *gungtong* across the country. Whereas dzongkhags like Thimphu (0%), Paro (0.05%), Gasa (0.02%) and Chukha (0.94%) recorded the lowest number of *gungtong*.

In terms of internal migration, most dzongkhags in the western region like Thimphu, Chukha and Paro gained from positive net migration whereas most dzongkhags from the eastern and central region like Trashigang, Mongar, Pemagatshel and Zhemgang experienced population loss from the negative net migration. In particular, Trashigang dzongkhag experienced the highest net loss of 23,536 persons while Thimphu dzongkhag gained substantially by 59,579 persons.

In 2017, the overall poverty rate was estimated at 8.2%.⁹ By dzongkhags, poverty rates are higher in Dagana, Zhemgang, Mongar, Pemagatshel, Gasa, Samtse, Sarpang, Trashiyangtse and

⁸ RNR Census of Bhutan 2019, MoAF, p.29.

⁹ NSB, 2017: *Bhutan Poverty Analysis Report (PAR) 2017*. P.9. According to the PAR, one out of 12 persons belong to households whose monthly per capita real expenditure is below the total poverty line of Nu.2,195.95 per person per month.

Trashigang. Poverty in Bhutan is largely rural phenomenon where rural poverty rate (11.9%) is significantly higher than urban areas (0.8%).

4. Observations

Upon closer review of the current situation of *satong* and *gungtong* across the country, following are some of the observations.

- Incidences of poverty, migration, *satong* and *gungtong* within the country is uneven. For instance, they are largely concentrated in some of the dzongkhags in the eastern, central and southern region.
- Internal migration patterns reveal that people are migrating mostly from the eastern and central regions to the western region. 20% of the land areas in the western part of the country hosts 45% of the total population.¹⁰ Most dzongkhags in the eastern region such as Trashigang, Mongar, Pemagatshel and Trashiyangtse that experienced higher negative net migration also reported higher proportion of *gungtong*. Correspondingly, dzongkhags with higher number of *gungtong* also showed higher *satong* in the country. There is a strong positive correlation (0.79) between *gungtong* and *satong* in the country.
- As evident from table 2, between 2010 and 2019, the total area under cultivation got reduced by over 28,000 acres (10%). By land use, *chuzhing* decreased by 29,566.42 acres (38.4%) while *kamzhing* increased by almost 14,000 acres (8.13%).

Table 2: Area of land under different agriculture land use (acres)

	2010	2019	Difference
Total area under cultivation	278,126.39	250,062.00	-28,064.39
Chuzhing	76,962.01	47,395.59	-29,566.42
Kamzhing	171,587.72	185,533.00	13,945.28

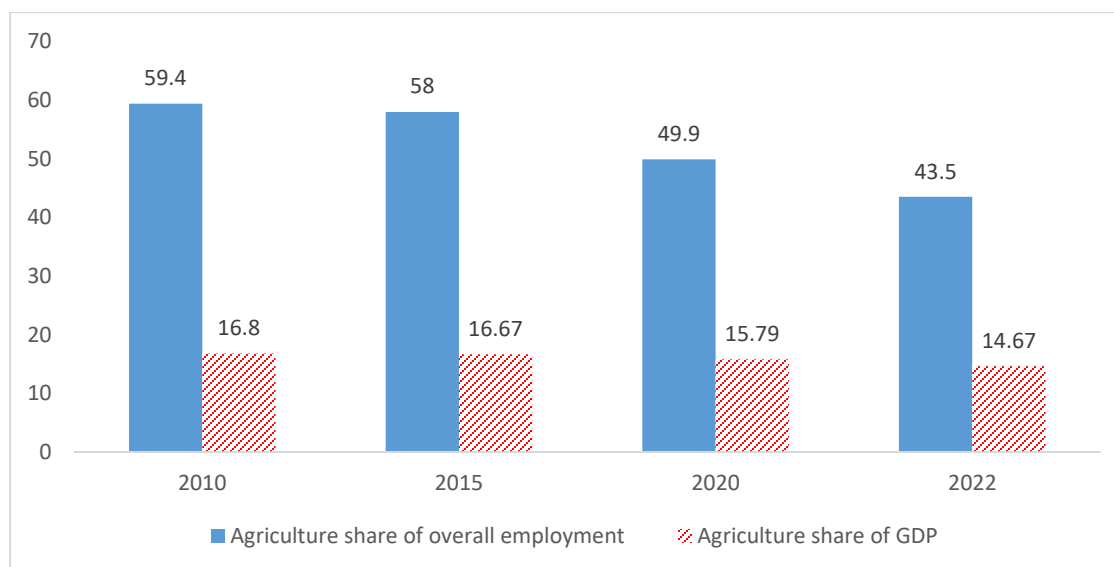
Source: Statistical Year Book 2011, NSB and RNR Census of Bhutan 2019, MoAF

¹⁰ Dasho Karma Ura's lecture presentation on 'Six reasons for livestock and farm output decline' at IISS, the Hague, April 25, 2024.

In 2019, for instance, 8,957.81 acres of wet land were left fallow. The opportunity cost of keeping it fallow translates to 14,322.5 MT of rice per year.¹¹ Further, between 2017 and 2022, both the harvest area under paddy cultivation and its production dipped by over 50%. On the other hand, import of rice has increased significantly from Nu. 1.7 billion in 2017 to Nu. 2.6 billion in 2022 and to Nu. 3 billion in 2023.¹² This has greatly impacted achieving rice self-sufficiency - it decreased to 25% in 2022 from 40.8% in 2018. Therefore, the Ministry of Agriculture and Livestock plans to enhance rice self-sufficiency from 25% (48,200 MT) to 35% (54,567 MT) during the 13th Five Year Plan.¹³

- Despite significant investments in the agriculture sector, it is still characterized by subsistence farming and low productivity. The chart 1 clearly shows that though the agriculture's share of overall employment declined from almost 60% in 2010 to 44% in 2022 its contribution to GDP declined only by small margin from 17% in 2010 to 15% in 2022. This is one of the key structural issues at the macro level which has direct bearing on the household income.

Chart 1: Overall share of agriculture in employment and GDP (%)



Source: *Statistical Year Book 2010, 2016 & 2023, NSB*

¹¹ Calculated for 8,957.81 acres of fallow wet land at current rice productivity of 1.6 MT/acre.

¹² DRC, MoF. Bhutan Trade Statistics, 2017, 2022 & 2023,p.iii.

¹³ Draft 13th FYP, PPD, MoAL.

Box 1: Observations from learning visit to Nepal

Like Bhutan, agriculture in Nepal is also characterized by subsistence farming, low productivity, high cost of production, dependent on seasonal rainfall, limited access to market and vulnerability to climate change. This is further constrained by out migration, particularly those in the young age (25-35 years) going for overseas employment. About 1,700 Nepali people travel abroad daily for employment (Nepal Economic Forum). The National Population and Housing Census of Nepal (NPHC) 2021 shows that about 2.2 million Nepalis are abroad. Even within the country, male labour force in particular leave agriculture sector in search of off-farm income opportunities. In totality, this out migration trend – both internal and external has great effect on increasing agricultural land abandonment and absentee households. According to the NPHC 2021, hilly and mountainous belts experience more out migration of 41% and 39.1% respectively, compared to the Terai belt of 33%.

The positive impact of migration is that one in every three households receive remittances. The inflow of remittances, which accounted for 10% of GDP in 1999-2000 has significantly grown over the last two decades amounting to NPR 875 billion or 23.3% of GDP in 2019-2020 (Nepal Economic Forum). However, since 81% of the total migrants (external) are male, it has changed the demographic dynamics in the villages and added more household responsibilities on the wives and other female of the households. This has hindered them to participate in the labour market productively.

In view of the similarity of challenges faced by Nepal, the GGC visited some villages in Syangja, Lamjung and Sindupalchok districts. The observations particularly from Syangja and Lamjung is worth sharing.

According to NPHC 2021, Syangja district has 68,959 households, out of which 28.2% or 19,310 are absentee households but members living within the country, and another 37% or 25,518 are absentee households and their members living abroad. In totality, it has 65.2% of the total households empty.



Photo: Abandoned houses in Akrang village, Syangja, February 26, 2024

The micro level scenario is evident from Akrang village under Syangja district. It is surrounded by a rich and fertile paddy land. Out of 46 households in the past, it now has only three active households. According to the ward chairman, the village in the past had around 300 people but now only about 10 to 15 people reside in the village. If not for the Christian missionary school providing education to local children, the entire village would have gone empty. There is significant changes in the agro-based land use and livelihood. 90% of the land in the village is fallow. The rich variety of fruit trees surrounding the households have become wild and the fallow land overgrown with trees and shrubs. This has attracted wild animals and residents confront high risk of human wildlife conflict.

According to the ward chairman, several factors contributed to the process of land abandonment and absentee households.

- Poor or limited infrastructure/services such as road, primary health care, school and clean drinking water.
- Out migration to urban areas and abroad for better employment opportunities.

- Well to do families also moving out of villages to urban centres for better services and livelihood.
- Low wages.
- Labour shortage.
- Political instability and long civil war.

The mayor of Syangja district expressed concern over increasing trend of out migration and fallow land. According to him, some of the notable interventions undertaken to address these issues include:

- Agriculture ambulance: This initiative helps farmers to transport their produce to nearby markets thereby, encouraging farming activities;
- Collateral free loan: Young people returning to villages from overseas are offered loan of NPR 0.5 million to start small business without any collateral; and
- Agriculture cooperatives: The government supports the formation of cooperatives, providing technical and financial assistance and helping them in agricultural production and marketing.

Lamjung district has 44,170 total number of households, out of which 28.3% or 12,500 are absentee households but members living within the country, and another 29.5% or 13,044 are absentee households and members living abroad. In totality, the district has almost 59% of the total households empty.

Like Akrang, Shyauth village and Tiwari Dara village in Lamjung are also faced with significant migration and change in agricultural land use. Shyauth village is endowed with fertile paddy land and orchard, particularly the oranges. In the past, oranges used to be the main cash crop exported all the way to Bangladesh. The village which used to have about 79 households is half empty now. Presently, most of the village inhabitants are women and elder people. Significant portion of paddy fields are lying fallow and orange trees abandoned. Similarly, out of 66 households in Tiwari Dara, 33 are vacant households. Most of the farm lands have become fallow. People in both the villages face crop depredation mainly from monkeys.



Photo: Fallow land and abandoned houses in Shyauth village, Lamjung, February 27, 2024

In order to address the current challenges, people shared that better economic opportunities, improved health and educational facilities are crucial to curb outmigration along with the introduction of crop ambulance system to facilitate agricultural marketing. They also suggested for improvement of road connectivity, irrigation and drinking water facilities.

At the national level, the government of Nepal allocated NPR 500 million for the FY 2020/21 to establish a Land Bank that would operate in 300 municipal level. However, discussion continues on the effectiveness of the Land Bank policy.

5. Situation of *Satong* and *Gungtong* in the Selected Areas

In order to facilitate comprehensive understanding of the ground realities surrounding *satong* and *gungtong*, 11 gewogs from six dzongkhags from southern, central and eastern regions were selected.

As shown in table 3, Tongmijangsa gewog in Trashiyangtse experienced nearly 41% of the total household empty followed by Nichula gewog in Dagana with 27%, and Phongmey and Kangpara gewogs in Trashigang with 20.15% and 17.15% respectively. Regarding population by gender, females slightly outnumbered their male counterpart in most of the gewogs. This clearly shows that farming is skewed towards increased reliance on the female labour force or feminization of the agriculture sector.

Table 3: Total households and *gungtong* in the selected gewogs

Sl. #	Gewogs	Total no of Household	Gung-tong	Gungtong as % of total HH	Total Present Population			
					Male	Female	Age above 65 years	Age below 8 years
1	Samtse	719	22	3.06	2,296	2,670	200	166
2	Tashicholing	730	3	0.41	1,336	1,520	239	124
3	Nichula	130	35	26.92	318	358	52	51
4	Karmaling	354	38	10.73	659	593	139	61
5	Lhamoizingkha	454	5	1.10	939	972	214	165
6	Kangpara	513	88	17.15	2,248	2,342	429	223
7	Phongmey	685	138	20.15	2,557	2,624	273	564
8	Tongmijangsa	367	149	40.60	377	401	179	90
9	Khamdhang	651	87	13.36	2,835	2,821	321	980
10	Khar	432	50	11.57	551	590	251	69
11	Trong	378	30	7.94	1,745	1,626	196	405

Source: *Respective Gewog and Dzongkhag Administrations, March, 2024*

It is clear from table 4 that agricultural land abandonment is higher in Khar (69%) followed by Khamdang (64.4%), Kangpara (38%) and Tongmijangsa (32.4%) gewogs. By land use type, fallow *chuzhing* is higher in Khar gewog followed by Tashicholing and Khamdang gewogs. Likewise, fallow *kamzhing* is predominant in Khar gewog followed by Khamdang, Tongmijangsa and Kangpara gewogs. In the context of the study areas, physical constraints (sloppy terrain, small and scattered land holdings), climate change (drying up of water sources), socioeconomic change

(education, health, family move, and off-farm opportunities), demographic change (older people left in villages) and human-wildlife conflict have significant effect on agricultural land abandonment and underutilization.



Photo: *Gungtong* at Lhakhangdung, Tongmijangsa gewog (left) and Momnangkhar, Phongmey gewog (right)

Table 4: Land use and fallow land in the selected Gewog

Sl.#	Gewogs	Chuzhing (Acre)			Kamzhing (Acre)			Total fallow land	Total Fallow land (%)
		Total area	Fallow land	Fallow land %	Total area	Fallow land	Fallow land %		
1	Samtse	873.00	280.00	32.07	1,230.00	309.00	25.12	589.00	28.01
2	Tashicholing	707.03	458.00	64.78	1,036.51	65.00	6.27	523.00	30.00
3	Nichula	167.67	19.96	11.90	288.94	80.42	27.83	100.38	21.98
4	Karmaling	176.00	4.00	2.27	221.00	24.00	10.86	28.00	7.05
5	Lhamoizingkha	386.77	0.00	0.00	621.64	15.43	2.48	15.43	1.53
6	Kangpara	219.77	47.45	21.59	4,406.65	1,704.11	38.67	1,751.56	37.86
7	Phongmey	410.76	66.41	16.17	951.00	310.67	32.67	377.08	27.69
8	Tongmajangsa	445.00	106.50	23.93	517.50	205.50	39.71	312.00	32.42
9	Khamdhang	634.9	402.00	63.32	2,947.17	1,903.81	64.60	2,305.81	64.37
10	Khar	46.15	41.15	89.17	3,127.85	2,140.71	68.44	2,181.86	68.74
11	Trong	533.28	64.18	12.03	2,709.79	321.82	11.88	386.00	11.90

Source: *Respective Gewog and Dzongkhag Administrations, March, 2024*



Photo: Fallow land at Dungkarling, Samtse Gewog (left) and Dengrey, Kangpar Gewog, Trashigang (right)

6. Observations

Following are some of the key observations emerging directly from the selected areas of study which is also resonated in other parts of the country.

6.1 Changing demography pattern

Bhutan's population pyramid shows significant changes in the age groups particularly for the child (less than 15 years) and elderly population (65 years and above). Between 2005 and 2017, proportion of child population decreased significantly from 33.1% to 26% and elderly population increased from 4.7% to 5.9%. Likewise, the aging index¹⁴ increased from 14.2% in 2005 to 22.7 in 2017¹⁵ – it was highest in Pemagatshel (35.4%) followed by Zhemgang (30.6%). Therefore, most rural areas now witness more elderly population as significant proportion of young adults and productive population have been migrating out (internal migration) for education and better livelihood (off-farm) opportunities.

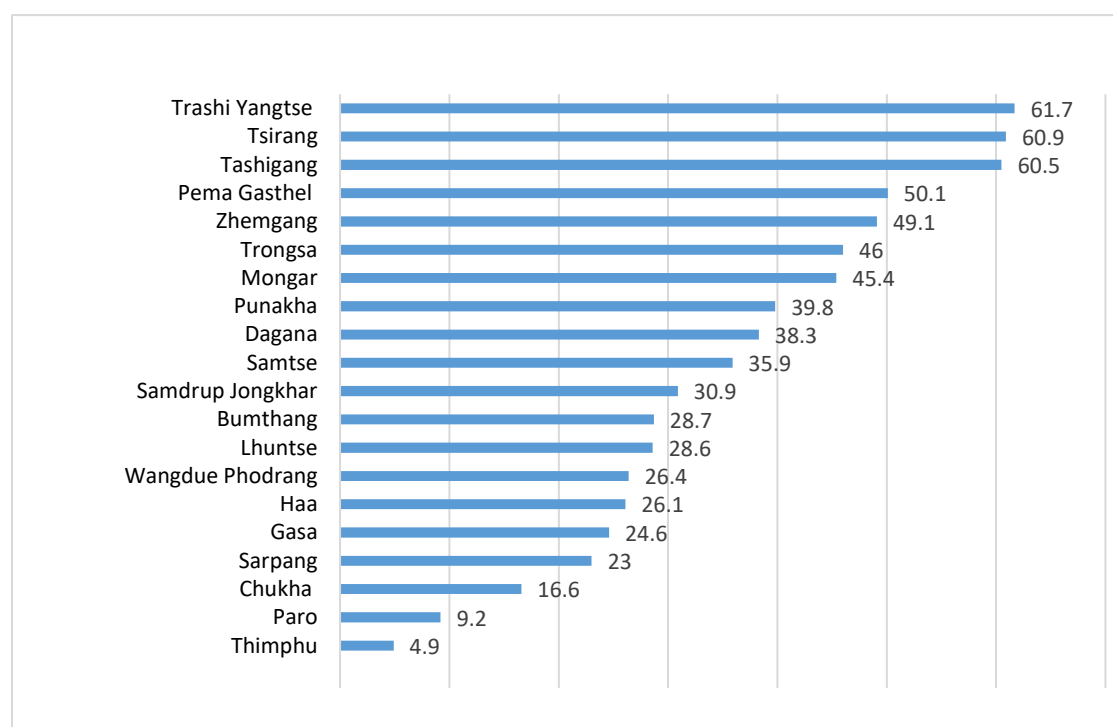
¹⁴ Aging index is defined as the ratio of the number of persons aged 65 years and above per 100 person under age 15. For instance, 2017 aging index indicates that for every 23 elderly persons of 65 years and above, there are 100 persons below 15 years of age.

¹⁵ NSB, 2018. Ibid,p.14.

6.2 Human wildlife conflict (HWC)

The human wildlife conflict is one of the greatest nuisances faced by the farmers posing direct threat to rural livelihoods, particularly those dependent on the agriculture and livestock rearing. Crop raiding by the wild animals particularly the wild pigs, monkeys, deer, porcupine, etc. is very rampant across the country leading to substantial crop losses and impacting food and nutrition security. According to the Department of Agriculture, 30% of the crops is lost to HWC. People on average spent 48 days and 67 nights from guarding crops from wild animals.¹⁶ HWC is found as the main reason (61.6%) for increasing fallow farm land.¹⁷ Chart 2 shows that eastern dzongkhags are more affected by wildlife compared to other dzongkhags.

Chart 2: % of households by districts reporting that they are affected by wildlife



Source: *Dasho Karma Ura's lecture presentation on 'Six reasons for livestock and farm output decline' at IISS, the Hague, April 25, 2024.*

¹⁶ Agriculture statistics 2017, MoAF, pp.37-38.

¹⁷ Farm mechanization study – EU/TACS for MoAF, 2022.

6.3 Shortage of labour and high cost of production

Farming practice is predominantly traditional in nature requiring high manual labour in activities such as planting, weeding, crop guarding and harvesting. For instance, labour requirement for rice production is 132 person days per year in low altitude compared to 146 in mid-altitude.¹⁸ Considering the trend of male out-migration for off-farm activities and movement of younger population from the rural areas, the labour force in farming is increasingly depending on the female labour force. Women now provide over 53% of all farm-related labour in many districts.¹⁹ Therefore, labour scarcity (47.2%) is reported as the second most reason for keeping land fallow. In general, it is reported that 34% of the total fallow land is due to labour shortage – 21% of the total fallow wet land and 37% of the total fallow dry land.²⁰ Gewogs sharing border in the southern region reported significant labour shortage after the day workers from across the border were restricted post COVID-19.

Table 5: Government and commercial hiring rates with and without subsidies

Description	Types of Machine								
	Power tiller	Mini tiller	Tractor >34HP	Tractor 34HP	Tractor 18HP	Combine Harvester	Paddy Reaper	Paddy Trans planter	Water Pump
Government approved rate Nu per day till June 2022	3376	3862	12044	9018	7000	13179	4427	4900	3301
Subsidized rate payable by farmers (Nu/day)	1500	1300	3800	2900	2300	4400	2200	1300	2500
Subsidy support by the Government (Nu/day)	1876	2562	8244	6118	4700	8779	2227	3600	801
Existing commercial rate of FMCL w.e.f. 14th September 2022 (Nu/day)	2455	2228	6715	5529	4785	8846	2870	3069	2608
Difference between Govt approved rate and commercial rate (Nu/day)	621	1638	5329	3489	2215	4333	1557	1831	693

¹⁸ Farm mechanization study, ibid.

¹⁹ Policy Brief, PPD, MoAF, p.7

²⁰ Consultation with MoAL, April 10, 2024.

Source: FMCL, April 2024

Agriculture productivity is further constrained by the availability of affordable agricultural inputs and equipment, mismatch in the crop labour needs with the availability of machineries, limited access to market and fluctuating market prices for agricultural products. The withdrawal of government subsidy in hiring of different farm machineries from September 2022 also impacted farmers thereby, further contributing to higher cost of production. As evident from table 5, hiring cost of power tiller without government subsidy is Nu. 2,455 per day compared to earlier subsidized rate of Nu.1,500 per day.

6.4 Shortage of irrigation

Bhutan's agricultural sector relies heavily on seasonal rainfall, making it vulnerable to climatic variations and water scarcity. Limited irrigation infrastructure, including channels, reservoirs, and drip irrigation systems restricts farmers' ability to cultivate crops year-round, especially during dry seasons or prolonged droughts. Traditional irrigation methods (surface flooding and furrow irrigation) are often inefficient and unsustainable, further exacerbating water shortages and agricultural inefficiencies.

Presently, only around 28% of the agriculture land has assured irrigation.²¹ Therefore, it is evident that the irrigation problem (25.4%) topped the list of different types of constraints faced by the households²² and 38.4%²³ of the total fallow land is due to water scarcity. The climate change experienced in the form of temperature change²⁴ and drying up of water sources have compelled farmers to keep their land fallow, which is very evident in Samtse and Tongmijangsa gewogs.

6.5 Market inaccessibility

Farmers rely heavily on agriculture for sustenance and income generation. However, the geographical terrain, coupled with limited transportation infrastructure, poses a significant barrier to accessing markets for many rural farmers. These challenges are exacerbated by factors such as

²¹ Consultation with MoAL, April 10, 2024.

²² RNR Census of Bhutan, 2019, MoAF, p.88

²³ Farm mechanization study – EU/TACS for MoAF, 2022.

²⁴ Bhutan warmer by 1.02 degree celsius in the last 27 years. <https://kuenselonline.com/climate-change-trends-in-bhutan/>

inadequate storage facilities, limited market information, and a lack of market-oriented agricultural practices.

6.6 Fragmented land holdings and scattered land in far flung locations

Scattered settlements and traditional inheritance practices have contributed to fragmented land holdings and scattered land ownerships in the far flung locations. In one of the surveys, it was reported that more than 50% of the fallow lands are located at the distance of more than 3 kms from their settlements.²⁵ The labour shortage coupled with HWC have compelled some of the households to abandon their farm lands in the far flung locations. Besides, the small size of land holding and hilly terrain hinder land management, mechanization and productivity in agriculture. Nonetheless, people remain highly grateful for His Majesty's land kidu. His Majesty The King granted 138,000 acres of land to some 131,000 individuals since 2010 to ensure adequate land holdings and secured livelihood.²⁶

6.7 Gungtong fees

In order to deter from keeping houses empty and not to burden the remaining households from labour/cash contribution for the up keeping of community services (maintenance of road and drinking water, organization and management of periodic community rituals, lhakhang renovation, etc.), some of the gewog administrations through Gewog Tshogde levy fine ranging from Nu.5,000 to 10,000 per absentee household per year. However, in the absence of a standard policy or act governing *gungtong*, gewog administration finds it extremely difficult to enforce levy of fines.

²⁵ Fallow land status and distribution in pilot survey areas-exploring innovative ideas to bring it under productive agriculture use, MoAF & NLC, 2022,p.4.

²⁶ Dasho Karma Ura's lecture presentation on 'Six reasons for livestock and farm output decline' at IISS, the Hague, April 25, 2024.

7. Recommendations

Issues surrounding *satong* and *gungtung* are interconnected and multi-dimensional in nature. In view of this, following recommendations at the policy, land use and program levels are proposed for priority interventions, which require comprehensive, collaborative and consolidated efforts to generate greater impact in the society, particularly in the rural areas.

7.1 Balanced regional development

The imbalanced in the socioeconomic development outcome is evident from the disparities in poverty and migration pattern across the country. While the migration process cannot be stopped, situation of socio-economic changes like poverty, *satong* and *gungtung* can be improved through creation of economic opportunities and augmenting infrastructure and services particularly in the rural areas. In this regard, it is critical to seriously pursue balanced regional development to enhance equitable socio-economic development and ensure improved access to essential amenities such as roads, communication, electricity, healthcare, education and ICT services. The government calling for districts to project annual GDP in the 13th FYP is one good initiative to expand economic opportunities.

7.2 Fallow land conversion policy

Recognizing that about 66,120 acres of arable land is lying fallow and forgoing potential production of 15,486 MT of paddy and 81,921 MT of maize, it is of paramount importance to revert fallow land into productive agriculture use to achieve food self-sufficiency. For a land scare country with increasing dependence on food imports, increasing agricultural land abandonment will further result into increased vulnerability of food security. Therefore, there is an urgent need to come up with the fallow land conversion policy at the earliest. Initiatives such as commercial or contract farming, fallow land bank, incentives/cost-sharing support, etc. could go well in the fallow land conversion policy.

7.3 National rice policy

Rice holds a great significant in Bhutanese culture, tradition, religion and farmers' livelihood. Although the rice is not the largest produced cereal, it is the most widely consumed cereal in the country. The per capita consumption of rice is estimated at 150 kg of milled rice per year. The annual requirement is over 100,000 MT per year, and in 2023, Nu. 3 billion worth of rice was imported. However, the rice production has declined over the years from 86,385 MT in 2017 to 40,745 MT in 2022, a decline by 112%. Similarly, the rice cultivation area has decreased from 51,368 acres in 2017 to 22,683 acres in 2022 and fallow wetland increased from 7820 acres to 8957 acres during the same period. This has resulted in the decrease of rice self-sufficiency from 40.8% in 2018 to 25.2% in 2022.

The current 31,640 acres of wetland (including the fallow wetland)²⁷ is not adequate to grow enough rice. It will give only 52,522 MT of paddy at an average yield of 1.66 MT/acre or 21,008 MT of milled rice. The country will still fall short of more than 80,000 MT of rice. Therefore, a separate National Rice Policy is crucial to provide focused policy framework for identification and conservation of rice landscape and enhance domestic production to achieve rice self-sufficiency.

7.4 Flexible use of wetland

Allowing the conversion of wetland to other land categories will certainly have far reaching consequences on the food security particularly the rice production. Therefore, flexible use of fallow wetland, which has no scope for paddy cultivation due to various reasons such as drying up of irrigation water source, steep slope, located far away from settlements, etc. must be considered to grow other crops. This will not only help put the fallow land into productive use but also enhance diversification of crop production.

7.5 Eligibility criteria for land exchange

Lands are also abandoned or left fallow because they fall in steep gradient. If it is a wetland, it is practically not possible to cultivate paddy. More than 31% of the total agricultural land is

²⁷ 22,683 acres of harvest paddy area in 2022 and 8,957 of fallow wetland.

situated on slopes as steep as 50%.²⁸ According to the land exchange rules and regulations, the private registered land is eligible for exchange only if: a) affected by natural calamities; b) fall within the critical watershed area and wetland; and c) scattered and located within state forests.²⁹ In view of this, it is recommended to include ‘private registered land located on a steep gradient’ in the eligibility criteria for land exchange.

7.6 Program support

To mitigate HWC and enhance self-sufficiency of cereals and essential vegetables, it is paramount to augment various program support in the form of upscaling electric fencing technologies; supplying of fertilizers and pesticides; access to improved farm machineries/gender friendly machineries, technologies and integrated cold storage facilities; renovating existing irrigation channels and constructing new ones with smart technologies; and developing lands to address numerous challenges being faced by the farmers.

7.7 Crop and livestock insurance scheme

There is a high risk associated in farming due to HWC and natural calamities. Though the previous Government reinstated the Endowment Fund for Crop and Livestock Conservation in 2019 to compensate crop and livestock damages by wild animals it could not be materialized due to inadequate financial resources, COVID-19 pandemic and sustainability issue. As HWC has significant bearing on the livelihood of farmers, the section 119 of Forest and Nature Conservation Act of Bhutan 2023 mandates the Government to institutionalize appropriate compensation measures to address crop and livestock by wildlife. Therefore, it is appropriate to initiate Insurance Scheme for the livestock depredation and crop damage by wild animals for the priority crops and categorized livestock farming identified by the Ministry of Agriculture and Livestock.

²⁸ MoAF and NLC, 2022: *Fallow Land Status and Distribution in Pilot Survey Areas – Exploring Innovative ideas to ring it under productive agriculture use*, p.2.

²⁹ Land exchange rules and regulations of Bhutan 2022, NLC, pp.1-2.

7.8 Subsidy support

Farming across the country is not only drudgery but it is further rendered difficult by a significant shortage of labour and limited access to machinery types suitable for different crops and women farmers. For instance, between 2017 and 2023, the average area under farm mechanization was 8,211.6 acres per year – power tiller being the most common machinery used by the farmers.³⁰ The government subsidy support ranged from 56% for power tiller to 68% for tractor 34 HP and 73% for paddy transplanter. However, with the withdrawal of government subsidy, a farmer now has to pay additional Nu. 1,255 to hire one power tiller per day.³¹ In view of the increasing labour shortage, it is crucial to reconsider the subsidy support for hiring of farm machinery, which will not only contribute to agricultural production and productivity but also ease huge financial and physical burden on the farmers.

Likewise, it is also vital to provide cost sharing packages for prioritized crops/commodities (rice, maize, potato, vegetables, fruits and nuts, etc.) and livestock activities (dairy, poultry, piggery, etc.) across the value chain ranging from production to processing and marketing to incentivize farmers to enhance productivity, improve livelihoods and contribute to overall national food security.

7.9 Access to credit

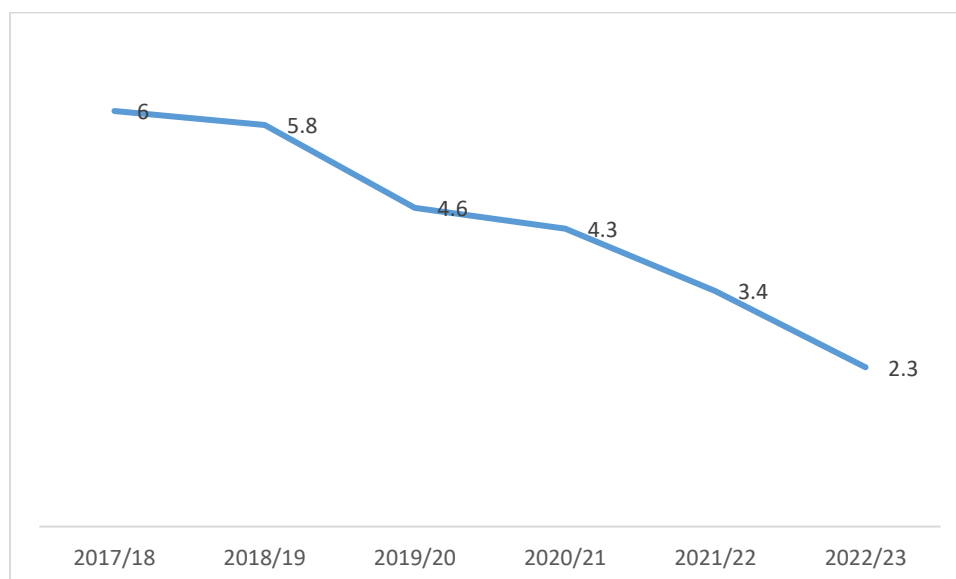
During the 109th National Day, 2016 in Trongsa, His Majesty the King commanded to change the overall credit share to the agriculture sector. On the contrary, as evident from the chart 3, the overall share of credit portfolio to agriculture sector has been declining continuously over the years. For instance, it decreased from 6% in the FY 2017/18 to 4.6% in 2019/20 and plummeted to 2.3% in the FY 2022/23. Moreover, the interest rates charged on agricultural loan by different financial institutions is high ranging from 8.32% - 10.85% (BoBL) to 10% (Druk PNB Bank Ltd.), 11% (RICBL), 8% (BNB) and 10.25% - 10.5% (BDBL).

³⁰ FMCL power point presentation, April 12, 2024.

³¹ Subsidized rate paid by farmer for a power tiller was Nu.1500/day compared to existing FMCL commercial rate of Nu. 2,755/day.

Recognizing the pivotal role of capital in catalyzing the growth, there is an urgent need to review the overall credit flows to the agriculture sector and the interest rates to improve enabling conditions for growth in the agriculture sector.

Chart 3: Overall share of credit to agriculture sector (%)



Source: *Annual Report 2018, 2019, 2020, 2021, 2022 & 2023, RMA*

7.10 Agriculture marketing

Even to this day, farmers sell their agricultural products in a rudimentary way in a local market, neighboring towns, to village traders or to a middleman. These are largely unorganized and farmers do not receive fair price. Moreover, lack of or inadequate infrastructure like road, storage, market shed/outlet, etc. further constrain rural agricultural development.

In view of the above, besides improving market infrastructure it is high time to strengthen market linkages between farmers and buyers by establishing or identifying dedicated actor who will facilitate buying of agricultural products from the farmers, guaranteeing fair price and also ensuring convenient and trust worthy commodities to consumers. This will also help contribute to import substitution.

7.11 Incentivize youth

In view of the increasing youth unemployment in the country, the Local Government should be tasked and supported by the Central Government to design a well packaged innovative scheme to attract youth back home. For instance, forming a youth group or cooperative to carry out potential economic activities such as contract farming, community contract, eco-tourism, value addition of one gewog product could be explored. Likewise, similar support could be extended to potential individuals with innovative business ideas and proposals. However, this must be complemented by targeted incentives such as entrepreneurial and skills training, interest or collateral free loan, logistic and marketing support.

7.12 Community vitality program

Communities in some of the gewogs at the borderland also face increasing *gungtong* and *satong*. For instance, in 2023, Yalang and Toetsho gewogs in Trashiyangtse recorded 31.2% and 23.8% *gungtong* respectively. Likewise, Lauri and Serthi gewogs in Samdrupjongkhar witnessed 29.4% and 23.5% *gungtong* respectively.³² Considering the strategic importance of communities at the borderland, it is crucial to design a Community Vitality Program to provide comprehensive development and services to enhance their livelihoods.

8 Conclusion

Increasing trend of *satong* and *gungtong* is posing a great challenge to rural economic development in particular and achieving the national food security in general. Migration for various reasons is leading to *gungtong*, which in turn is also contributing to *satong*. But other multiple driving factors such as HWC, labour shortage, lack of irrigation, small and fragmented land holdings are also playing a vital role in land abandonment. The country has witnessed significant decrease in the land under agriculture over the past few decades, which in turn has led to decline in the cereal production and surge in the food import. For instance, a total of 84,584.45 MT of rice was imported in 2019 amounting to Nu. 2.15 billion³³, which further

³² GGC Chairperson's personal record from his visit to those gewogs in 2023.

³³ Statistical Year Book 2020, NSB, p.141.

increased to Nu. 3 billion in 2023³⁴. Despite periodic policy and significant program interventions over the past decades, the agriculture sector could not leverage to transform into a productive sector. To address this long structural issue, those underlying factors causing structural drawbacks must be seriously addressed. As *satong* and *gungtong* are multidimensional in nature, right mix of interventions with coordinated efforts from different sectors is of outmost importance.

³⁴ Bhutan Trade Statistics 2023, DRC, MoF, p.111,

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